

**Remarks**

Reconsideration and allowance of this application, as amended, are respectfully requested.

Claims 1 and 18 have been amended to even more particularly define the instant invention. Claim 2 has been canceled without prejudice or disclaimer. Claims 1 and 3-20 are now pending in the application. Claims 1, 16, and 18 are independent. The rejections are respectfully submitted to be obviated in view of the amendments and remarks presented herein. No new matter has been introduced through the foregoing amendments.

Claim 1 has been amended in part to incorporate the feature of the invention previously presented in now-canceled claim 2. In addition, claim 1 further defines the required "temperature increase" step. Thus, instant claim 1 defines a method that includes "at least the component area to be tested being cooled before being wetted with the testing liquid, and the temperature increase being effected by allowing the component to heat to room temperature." Support for the "allowing the component to heat to room temperature" feature is found in the disclosure at specification page 6, lines 9-13. Claim 18 has been amended in a parallel manner.

Entry of each of the amendments is respectfully requested.

35 U.S.C. § 103(a) – Tetsuo, Hirota '965, and Ueda

Claims 1-4, 6-10, 18, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 57054832 to Tetsuo et al. (hereinafter "Tetsuo") in view of U.S. Patent No. 3,664,965 to Hirota et al. ("Hirota '965") and U.S. Patent Application Pub. No. 2002/0012767 of Ueda et al. ("Ueda").

The rejection of claims 1-4, 6-10, 18, and 19 under § 103(a) based on Tetsuo, Hirota '965, and Ueda is respectfully deemed to be obviated. For at least all of the reasons presented in Applicants' Amendments filed May 4, 2009, and October 22, 2009, and for the following reasons, the combined disclosures of Tetsuo, Hirota '965, and Ueda would not have rendered obvious Applicants' presently claimed invention.

The combined disclosures of Tetsuo, Hirota '965, and Ueda do not teach all of Applicants' presently claimed features. Instant claim 1 defines a method of leak-testing a component that includes, *inter alia*, "at least the component area to be tested being cooled before being wetted with the testing liquid, and the temperature increase being effected by allowing the component to heat to room temperature."

If the test area is cooled before the thin film of testing liquid is applied, the required temperature increase of the component is automatically effected as the temperature of the component gradually approaches the ambient room temperature (see, e.g., the disclosure at specification page 6, first full paragraph,

and the paragraph bridging pages 14 and 15). The aforementioned efficient and energy-saving technique of the instant invention is certainly not taught by the Tetsuo/Hirota '965/Ueda combination.

Furthermore, there is simply no teaching in any of Tetsuo, Hirota '965, and Ueda that would have led one to select the references and combine them, let alone in a way that would produce the invention defined by Applicants' instant claim 1.

Accordingly, the combined disclosures of Tetsuo, Hirota '965, and Ueda would not have rendered obvious the invention defined by claim 1. Claims 2-4 and 6-10 are allowable because they depend, either directly or indirectly, from claim 1, and for the subject matter recited therein.

As indicated above, claim 18 has been amended in a manner that parallels the amendment of claim 1. Claim 18, therefore, is similarly allowable. Claim 19 is allowable because it depends from claim 19, and for the subject matter recited therein.

35 U.S.C. § 103(a)

Since the Tetsuo/Hirota '965/Ueda combination is applied in two of the other rejections under § 103(a) -- claims 5, 14, and 20 as being unpatentable over Tetsuo in view of Hirota '965 and Ueda and further in view of U.S. Patent No. 4,553,435 to Goldfarb et al. ("Goldfarb"), and claims 11-13 and 15 as being unpatentable over Tetsuo in view of Hirota '965 and Ueda and further in view of

U.S. Patent No. 4,113,673 to Hirota et al. ("Hirota '673") -- each of these rejections is also respectfully deemed to be obviated.

Claims 5 and 11-15 depend, either directly or indirectly, from claim 1. Claim 20 depends from claim 18. Claims 1 and 18 are allowable over the Tetsuo/Hirota '965/Ueda combination for the reasons presented above. Claims 5, 11-15, and 20 are, therefore, also allowable. And, the combined disclosures of the cited references would not have rendered obvious Applicants' claimed invention because the disclosures of Goldfarb and Hirota '673 do not rectify any of the above-described deficiencies of Tetsuo, Hirota '965, and Ueda.

Furthermore, there is simply no teaching in any of the references that would have led one to select the references and combine them in a way that would produce the invention defined by any of Applicants' pending claims.

Claim 16 remains as previously presented. The rejection of claims 16 and 17 under § 103(a) as being unpatentable over Tetsuo in view of Hirota '965, Ueda, and Goldfarb is respectfully traversed. For at least the following reasons, the combined disclosures of Tetsuo, Hirota '965, Ueda, and Goldfarb would not have rendered obvious Applicants' claimed invention.

Applicants first wish to emphasize the following point. The Office Action rejects independent claim 16 based on a combination of four references. Applicants respectfully submit that in view of the fact that the Office Action must rely upon the

combined teachings of four references in order to meet the features of the claimed invention, that fact alone, in and of itself, is evidence of the nonobviousness of the instant invention.

Applicants respectfully submit that the rejection of claims 16 and 17 is based upon an *impermissible* hindsight reconstruction, i.e., one made only in view of Applicants' disclosure.

The Office Action relies upon Tetsuo as the primary prior art reference, which is directed to an entirely different technique, i.e., submersion. In contrast, the present invention teaches the application of a thin film of testing liquid. According to the Office Action (page 3), the aforementioned difference is allegedly suggested by Hirota '965, in order to "allow leak origins to [be] precisely defined and remain visible for extended time periods."

However, Applicants submit that a person having ordinary skill in the art would not have any incentive to replace the container 1 filled with liquid, as taught by Tetsuo, with a thin film of liquid applied to the surface. The set-up of Tetsuo has a light source 7 which irradiates rising bubbles 5 gathered in a bubble collector 6. A photo detector 9 measures how the light from the light source 7 is scattered or intercepted. Accordingly, Tetsuo necessarily requires the container 1 to be filled with liquid, as the liquid forms the medium for the rising bubbles 5 in order to allow for automatic detection through detector 9 and light

source 7. The disclosed detection means 7, 9 would certainly not work with a film of liquid distributed on the surface of the test piece 4.

It follows that a person having ordinary skill in the art would not search for alternatives to the submersion technique of Tetsuo and would therefore not consider the teachings of Hirota '965. Thus, Applicants submit that Tetsuo and Hirota '965 are simply not logically combined.

If, however, Hirota '965 is taken as a starting point for a comparison with the instant invention, a person skilled in the art would not contemplate the teachings of Tetsuo as an alternative to the introduction of pressurized gas to the void interior of large hull structures in ships or tanks, since raising the temperatures would not be feasible for the large cavities to be inspected by Hirota '965.

Moreover, the Office Action contends that the combination of Tetsuo and Hirota '965 with Ueda would be obvious. In particular, the Office Action relies on the discussion of the prior art in Ueda, i.e., that prior art panels are in general sealed (see Ueda paragraph [0004]). However, the aforementioned disclosure fails to establish any nexus between such sealed honeycomb cells - which are of course *per se* well known in the art - and any kind of leakage test.

On the other hand, as explained in detail in Applicants' response of October 22, 2009, the method actually taught by Ueda


requires - entirely opposite to the instant invention - air leakage from the interior, as the pressure must always be equal inside and outside the enclosed cells. In this respect, the air permeability test of Ueda gives no suggestion of the present air leakage test in connection with the claimed of materials. Therefore, a person having ordinary skill in the art would have no motivation to combine Tetsuo and/or Hirota '965 with the teachings of Ueda.

Accordingly, the combined disclosures of Tetsuo, Hirota '965, Ueda, and Goldfarb would not have rendered obvious the invention defined by claim 16. Claim 17 is allowable because it depends from claim 16, and for the subject matter recited therein.

In view of the foregoing, this application is now in condition for allowance. If the examiner believes that an interview might expedite prosecution, the examiner is invited to contact the undersigned.

Respectfully submitted,

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